TARANTULA LIFE HISTORY RECORDS[1]

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ABSTRACT

The growth and development in size and weight are given for four tarantulas. Tarantulas reach maturity in from 8 to 13 years. Mature males usually live for 2–3 months; mature females may live ten or more years. Very young tarantulas may be fed on termites; older ones on grasshoppers and June beetles.

Rearing tarantulas and keeping them until they die of old age constitutes a long time project. Since tarantulas are cannibalistic they must be isolated and given individual attention. This care and attention may continue for twenty years or longer. Time and the attention they require prevent rearing of large numbers together. In this paper I present a relatively complete record of the growth of both males and females.

Young tarantulas, from the time they emerge from the cocoon late in August or early September, apparently do not feed until the following May. After that, if a large family is left together in a jar for several months the young serve each other as food. Water is required every three or four days.

When a limited number have been isolated, they are fed termites two or three times a week. Later the spiderlings are able to manage small grasshoppers. Subsequently they are fed, once or twice a week, on June beetles from April until August and on grasshoppers through September and October. They are given water once a week. In winter they are transferred from the laboratory to my basement and water is supplied every ten days.

Measurments and weighings were made in the fall, after the last feeding, and again in spring before the first feeding. Length of the body includes the upper segment of the chelicerae; length of the carapace is from the middle front to the notch in the rear. These measurements were made with a sharp-pointed caliper. Weights were determined on a torsion balance on or near the

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same day the measurements were taken. The very small tarantulas were placed in a small, suitable container; the larger ones in a carboard box about 4 inches square.

Body length measurements, as described here, may not accurately determine size but, when repeated bi-annually over a period of 20 years, may be regarded as a fairly good record of the increase in length of the carapace. Even so, it does not readily tell the size of the animal, nor its rate of growth.[2]

RATE OF GROWTH

A2, (Table 1.) a male, was reared from young that emerged

Table 1. A2.

Date	Length of Body (mm)	Length of Carapace (mm)	Weight in grams
Feb. 9, 1927	5.5		
Jan. 7, 1928	8.1	2.5	
Mar. 5, 1929	14.5	4.8	.2407
Oct. 7, 1929	20.5	6.2	.8339
Apr. 1, 1930	20.5	6.8	.8045
Oct. 17, 1930			2.6190
Apr. 1, 1931			2.4443
Oct. 20, 1931	38.0	11.3	6.3955
Apr. 13, 1932	37.8	11.8	5.4810
Oct. 11, 1932	40.5	14.7	7.1107
Apr. 6, 1933	42.6	14.7	7.3520
Oct. 7, 1933	46.5	15.7	10.1100
Apr. 18, 1934	45.5	16.0	9.7215
Oct. 30, 1934	47.1	17.1	10.9365
Apr. 12, 1935	47.5	17.2	10.6616
Nov. 6, 1935	49.5	17.3	11.9282
Apr. 18, 1936	48.0	16.8	11.4255
Sept. 5. 1936	47.7	18.1	11.8336
Oct. 7, 1936	48.4	17.6	10.8491

from the cocoon in August 1926. He matured August 23, 1936, at an age of ten years and died August 31, 1937. During his adult life this male constructed 17 sperm webs between September 3 and October 16. He mated 12 times with 4 different females.

A4, (Table 2.) a female, was reared from the same lot which started with eight individuals, but was reduced to four; A1, A2, A3, A4. Her life history began in August 1926. She matured August 25, 1936, at age 10; she died July 17, 1938. After reaching maturity, she mated 5 times with 3 different males from Sept.

[2] Unless otherwise indicated, the measurements and weights refer to the species common in Arkansas, *Aphonopelma hentzi* Girard.

Table 2. A4.

Date	Length of Body (mm)	Length of Carapace (mm)	Weight in grams
Feb. 7, 1927	5.5		
Jan. 7, 1928	9.8	3.7	
Mar. 5, 1929	16.4	5.6	0.3386
Oct. 7, 1929	20.3	7.1	0.8200
Apr. 1, 1930	21.1	6.9	0.8668
Oct. 17, 1930			2.8316
Apr. 1, 1931			2.6175
Oct. 20, 1931	39.7	14.0	6.0550
Apr. 13, 1932	38.5	14.0	5.7878
Oct. 11, 1932	43.4	15.5	7.3144
Apr. 14, 1933	42.7	15.5	7.8457
Oct. 9, 1933	50.0	16.8	11.2522
Apr. 18, 1934	47.6	16.8	10.6800
Oct. 30, 1934	48.4	18.5	11.3900
Apr. 12, 1935	48.9	17.7	10.9556
Nov. 6, 1935	48.0	17.7	10.3416
Apr. 18, 1936	47.5	18.0	10.5289
Sept. 5, 1936	49.0	18.6	11.7001
Oct. 7, 1936	50.0	19.1	11.7401
Oct. 22, 1937	47.2	18.4	10.2845
Apr. 1, 1938	48.5	19.1	11.6342

Table 3. E4.

Date	Length of Body (mm)	Length of Carapace (mm)	Weight in grams
Oct. 11, 1932	4.1–4.5	1.7–1.5	.00566
Apr. 14, 1933	5.3–6.2	1.4–1.6	.0125
Oct. 9, 1933	8.5	2.3	.0579
Apr. 18, 1934	9.0	2.7	.1135
Oct. 30, 1934	12.3	3.6	.1620
Apr. 12, 1935	12.0	4.3	.1284
Nov. 6, 1935	15.3	5.4	.3248
Apr. 18, 1936	15.5	5.0	.3070
Oct. 7, 1936	16.8	6.0	.4278
Oct. 22, 1937	16.7	6.2	.4170
Apr. 1, 1938	17.5	6.6	.3713
Oct. 26, 1938	19.0	6.5	.6268
Apr. 18, 1939	19.5	7.0	.6666
Nov. 3, 1939	24.7	9.2	1.3585
Apr. 6, 1940	24.2	9.1	1.2140
Nov. 7, 1940	30.0	10.0	2.5400
Apr. 16, 1941	32.0	10.8	2.8875
Oct. 28, 1941	31.0	11.4	2.6320
Apr. 16, 1942	33.3	11.16	3.2400
Oct. 27, 1942	34.6	12.2	3.7120
Apr. 17, 1943	31.5	12.3	4.7500
Nov. 1, 1943	38.1	13.8	5.0110
Apr. 22, 1944	47.8	13.7	4.9550
Nov. 8, 1944	44.3	15.8	7.5500
Apr. 18, 1945	48.5	16.4	7.1750

3 to Sept. 27, 1936. She made a cocoon on July 2, 1937 which contained 736 eggs.[3] These failed to hatch. In her annual molt in July 1938 she had difficulty and died soon after. She had not fed since the preceding fall.

E4, (Table 3.) a male, represents another lot that emerged from the cocoon August 13, 1932. He matured August 27, 1945, at the age of 13 years and 2 weeks. He died November 7, 1945.

Table 4. Señora Belmar.

Date	Length of Body (mm)	Length of Carapace (mm)	Weight in grams
Oct. 30, 1934	49.2	15.7	10.7375
Apr. 12, 1935	47.8	15.6	10.2800
Nov. 6, 1935	52.3	18.3	12.1581
Apr. 18, 1936	52.2	18.2	12.9747
Oct. 7, 1936	53.3	19.8	12.9425
Oct. 22, 1937	54.7	19.1	14.8345
Apr. 1, 1938	56.6	19.6	16.2042
Oct. 26, 1938	53.3	19.4	14.3797
Apr. 19, 1939	57.2	20.0	16.5013
Nov. 3, 1939	58.0	20.4	17.6650
Apr. 6, 1940	58.2	20.7	18.3800
Nov. 6, 1940	60.0	21.3	16.9020
Apr. 16, 1941	59.0	21.6	18.7350
Oct. 28, 1941	58.9	21.0	17.209
Apr. 16, 1942	64.3	21.5	22.225
Oct. 27, 1942	62.2	22.2	21.605
Apr. 17, 1943	64.2	21.4	24.382
Nov. 1, 1943	61.7	22.6	20.892
Apr. 22, 1944	66.5	22.7	24.175
Nov. 8, 1944	63.1	24.1	26.033
Apr. 18, 1945	67.6	24.0	28.965
Nov. 14, 1945	67.4	23.2	26.630
Apr. 19, 1946	69.8	24.5	29.950
Nov. 13, 1946	64.1	24.6	23.487
Apr. 30, 1947	69.6	25.4	26.387
Nov. 20, 1947	68.0	24.3	25.607
Apr. 14, 1948	69.2	24.0	28.785
Nov. 13, 1948	65.5	24.2	23.602
Apr. 21, 1949	66.2	26.1	22.636
Nov. 28, 1949	63.2	21.14	19.915

He made only one sperm web but failed to mate with either of two females.

My best example of female longevity is a tarantula taken in September 1934, near Nazathan, Sinaloa, Mexico. This species is pale grayish-brown in color and slightly larger than the common Arkansas species. For lack of the proper technical name, I have called her "Señora Belmar." (Table 4.) Judging from

[3] In other cocoons examined the number of eggs has ranged from 631 to 1018.

her size she was mature when captured. In contrast to most tarantulas that are easily handled, she fiercely resisted efforts to hold her while being measured; once she managed to bite me. This attitude, she steadfastly maintained until she died nearly 16 years later.

Longevity

The tarantulas observed crossing highways in early fall, are mature males. Their lives are brief, even if not killed by motorists, and when brought into the laboratory they live for only a few weeks, rarely until the end of December. Out-of-doors some males survive the winter every year, as is shown by the appearance of mature males on the highways and elsewhere during late May and the first half of June.

In the laboratory mature males reared from newly-emerged or partly grown individuals may live through the winter and well into the next year. I have records of mature males living 7, 10, 11, 17, and 20 months. Usually males reach maturity in 9 or 10 years. I have one record for 8 and one for 13 years. Mature status is easily recognized by the enlarged distal segment of the palpus which carries the intromittent organ. There is also a distinct change in color. Newly transformed males are a very dark brown and have a bright golden carapace.

Female tarantulas are stay-at-homes. Occasionally a young, or a mature female tarantula is found wandering about, apparently in search of a better place to stay. To collect females one has to find them where they live, under stones or in holes. Maturity is not so easily and definitely recognized in this sex. I have depended mainly on size and on willingness to mate. A4 and A2 were siblings. The easily recognized mature male, A2, mated with the female, A4, of the same age. In this pair maturity was reached in 10 years. This is probably the usual time required. After reaching maturity the females may live for a number of years. A4 disappointed me when she died a little more than 2 years after maturing.

A female of the Arkansas species, Mc16, taken as a 2-year old, matured at age eleven and died at the age of 22 years and 4 months. Another local female, WH1, taken as a 7-year old, Sept. 17, 1925, lived till August 8, 1938, reaching an age of about 20 years. A large female *Dugesiella crinita* from Tlahualilo, Mexico, lived for 8 years and 10 months; a brown-banded species

from Santiago, Mexico, lived for 9 years; and the golden-banded species from Guerrero, *Aphonopelma smithi,* lived for nine years. All of these may be considered as having attained an age of about 20 years.

Molting

The young tarantulas go through their first molt before they leave the cocoon, or immediately thereafter. The following year they molt 3 or 4 times; the tiny skins are easily overlooked. In the following year there are again 4 molts, and during the following three years there are 2 molts. After that there is one molt a years. A large female *Dugesiella crinita* from Tlahualilo, Mex- old age. Rarely, mature females molt twice during the season, April to November, and, occasionally, a mature female misses a molt. This seems to be more common in the Mexican species than in native ones. "Señora Belmar" missed three molts during the fifteen years of her adult life. Another species, *Aphonopelma emilia,* apparently molts regularly once every other year.

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NEW SARCOPHAGINE FLIES (DIPTERA: SARCOPHAGIDAE)

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ABSTRACT

Sarcophaga **downsiana,** new species, Venezuela; *Sarcophaga* **filamenta,** new species, Dutch Guiana (Surinam); *Endemimyia* **vaurieae,** new species, Mexico are new neotropical species described and figured from the male sex. *Sarcophaga* (*Idoneamima*) **footei,** new species, is described from male,